

ABSTRACT OF THE DISCLOSURE

A cellular wireless packet data communication system containing transmit-only endpoint devices which transmit to receive-only base stations. The system is configured to allow for large area coverage (e.g., a metropolitan area) with far fewer number base stations than are required with conventional two-way cellular systems. The base station coverage areas are configured to overlap, allowing for reception of packets at multiple base stations. A data concentrator resolves redundantly received messages. The network is configurable as a WAN, a LAN, or a combination of the two. Novel modulation techniques (e.g., a 16QAM submodulation together with a 7FSK modulation) are used such that low cost components can be used in the transmitters and receivers while achieving outstanding probability of success performance. The endpoint devices are battery operated and accordingly, are designed for low power consumption and multi-year battery life. The system is used in a variety of applications including remote monitoring and mobile communications.